Is Ulnar-sided Intercarpal Fixation Necessary in Treatment of Perilunate Injuries?

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INTRODUCTION: Complete perilunate injuries are traditionally treated with reduction and radial sided (scapholunate fixation or scaphoid ORIF) and lunotriquetral fixation to maintain proximal row and midcarpal alignment. However, fixation of the lunotriquetral joint may be difficult and cause malalignment. We hypothesized that there would be no difference in patients with and without ulnar sided fixation. The purpose of this study was to compare the radiographic and clinical outcomes of patients with perilunate injuries treated with radial and ulnar sided fixation with those who had only radial sided fixation.

METHODS: 79 patients over a 20 year period treated for perilunate injury were contacted and QuickDASH scores were obtained from those available. Radiographs were reviewed for injury type and surgical fixation method. Final radiographs were evaluated for lunotriquetral gap, scapholunate angle, capitolunate angle, and presence of radiocarpal or midcarpal arthritis. Arthritis grading was performed by a board-certified hand surgeon blinded to the ulnar fixation.

RESULTS: 32 (29M:3F) patients aged 35 (17-60) returned their quickDASH scores at an average of 69 months, 17 with and 15 without ulnar-sided fixation. There were no differences in the demographics of the two groups. We found no difference in quickDASH scores for those with (16.7) vs. those without (17.9) ulnar fixation (p=0.86). We also found no difference in luno-triquetral gap (1.3mm vs 1.6mm; p=0.25), scapho-lunate angle (58° vs 61°; p=0.94), or capito-lunate angle (11.5° vs 7.8°; p=0.65) on followup radiographs after union. 11/32 (46%) patients had radiographic evidence of midcarpal or radiocarpal arthritis at final follow-up; 9/13 (69%) of those with ulnar fixation and 2/11 (18%) without, (p=0.01). No patient developed a VISI deformity. Interestingly, the presence of radiographic arthritis did not correlate with a significant increase in quickDASH score (22.7 vs 15.9, p = 0.38).

DISCUSSION AND CONCLUSION:

This represents the largest reported series of patients with perilunate injuries treated without ulnar-sided fixation. No difference in functional or radiographic outcome was shown between patients treated with or without ulnar sided fixation although those with ulnar sided fixation were more likely to have radiographic arthritis. These results suggest that isolated radial sided fixation may result in acceptable functional outcomes for patients with perilunate injuries.